
TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

FOR

MILITARY PYROTECHNICS

This copy is a reprint which includes current
pages from Changes 1 and 2.

HEADQUARTERS, DEPARTMENT OF THE ARMY
NOVEMBER 1978

CHANGE }
No. 2 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 10 April 1981

**Organizational Maintenance Manual
(Including Repair Parts and Special Tools List)
For
MILITARY PYROTECHNICS**

TM 9-1370-203-20&P, 17 November 1978, is changed as follows:

1. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page. Added or revised illustrations are indicated by a vertical bar adjacent to the identification number.

Remove pages

1-3 and 1-4
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2-5 through 2-8
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1-3 and 1-4
2-1 and 2-2
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By Order of the Secretary of the Army:

Official:

J. C. PENNINGTON
Major General, United States Army
The Adjutant General

E. C. MEYER
General, United States Army
Chief of Staff

Distribution:

To be distributed in accordance with DA Form 12-40 Organizational maintenance requirements for PYROTECHNICS.

CHANGE }
No. 1 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
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ORGANIZATIONAL MAINTENANCE MANUAL
(Including Repair Parts and Special Tools List)

For

MILITARY PYROTECHNICS

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1. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page. Added or revised illustrations are indicated by a vertical bar adjacent to the identification number.

Remove pages

i and ii

1-1 through 1-4

2-1 through 2-8

A-1 and A-2

B-1 through B-3

C-3 through C-6

D-1 and D-2

Insert pages

i and ii

1-1 through 1-4

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TECHNICAL MANUAL }
No. 9-1370-203-20&P }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 17 November 1980

ORGANIZATIONAL MAINTENANCE MANUAL
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)
FOR

MILITARY PYROTECHNICS

REPORTING OF ERRORS

You can help improve this manual by calling attention to errors and by recommending improvements and stating your reasons for the recommendations. Your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), should be mailed directly to Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS-MA, Dover, New Jersey 07801. A reply will be furnished direct to you. For your convenience, preaddressed DA Forms 2028-2 are included as final pages of this manual.

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CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

a. These instructions apply to military pyrotechnics and are for use by organizational maintenance personnel.

b. Operating instructions are contained in:

- (1) Pyrotechnic Signals (TM 9-1370-206-10).
- (2) Pyrotechnic Simulators (TM 9-1370-207-10).
- (3) Photoflash Cartridges, Surface Flares, and Miscellaneous Pyrotechnics (TM 9-1370-208-10).

c. For operator and organizational maintenance instructions on the MK 45 MOD 0 Aircraft Parachute Flare, refer to TM 9-1370-201-12.

d. For operator maintenance instructions on the M206 Aircraft Countermeasure Flare refer to TM 9-1095-206-13&P.

1-2. Forms, Records and Reports

a. *Forms.* Forms required by organizational maintenance personnel are listed in appendix A and in DA Pam 310-2. Department of the Army maintenance forms and reporting procedures are prescribed in TM 33-750.

b. *Field Report of Accidents.* Accidents involving injury to personnel or damage to materiel will be reported on DA Form 285 in accordance with AR 385-40. Malfunctions will be reported in accordance with AR 75-1.

c. *Report of Damaged or Improper Shipment.* Material received in damaged or otherwise unsatisfactory condition because of deficiencies in preservation, packaging, marking, loading, storage, or handling will be reported on SF 364 in accordance with AR 735-11-2. Reports of improper shipment or damage caused by transportation discrepancies will be reported on SF 361 in accordance with AR 55-38.

1-3. Destruction of Military Pyrotechnics to Prevent Enemy Use

Destruction of military pyrotechnics, when subject to capture or abandonment, will be undertaken by the user only when, in the judgment of

the unit commander concerned, such action is necessary in accordance with orders of, or policy established by the Army commander. (Refer to TM 750-244-5-1).

1-4. Safety

a. *Requirements for Safety.* Requirements for safety, care, and handling of pyrotechnic items and accessories are included in TM 9-1300-206, TM 9-1370-201-12, and AR 385-64, as applicable.

b. *Specific Safety Precautions.*

(1) Pyrotechnics are more dangerous than many other types of ammunition, because they are more easily initiated. Items with primers should be guarded to prevent a blow on the primer, because such a blow could activate the item.

(2) Pyrotechnics must never be exposed to moisture. Items showing any signs of moisture should be forwarded to authorized personnel for disposal.

(3) Protect pyrotechnics from temperatures below -65° F. or above 140° F.

(4) Pyrotechnics (except standard emergency use items) should not be left indefinitely in aircraft. They should be removed and restored to their original condition and packing.

1-5. Care and Handling

a. Military pyrotechnics must be handled with care at all times. Besides the hazardous pyrotechnic composition, pyrotechnics are composed of sensitive elements, such as, friction compositions and primers.

b. In order to keep military pyrotechnics in a serviceable condition and ready for immediate use, the following general rules apply.

(1) Store pyrotechnics in a dry, well-ventilated place, out of direct sunlight, and protect against excessive or variable temperatures.

(2) Handle pyrotechnics with care and protect against shock.

(3) Do not drop or throw boxed pyrotechnics.

(4) Place boxes containing signal cartridges which are discharged by percussion primers, flat with the top up.

(5) Handle pyrotechnics gently, especially the type which are projected, to avoid denting or deforming the barrel or case.

Section II. DESCRIPTION AND DATA

1-6. Types of Pyrotechnic Devices

Pyrotechnic devices may be grouped as follows: photoflash cartridges, flares, signals, simulators, and miscellaneous pyrotechnics. The tabulated data in this chapter and the Maintenance Allocation Chart in appendix B is organized to reflect these divisions.

1-7. Identification

Pyrotechnic devices are identified by markings on the packaging container. These markings include, as appropriate, National stock number (NSN), Department of Defense Identification Code (DODIC), nomenclature and model of device, and lot number. Specific colors are painted on some of

the containers as a secondary means of identification.

1-8. Description

For detailed description of items refer to:

- a. TM 9-1370-206-10.
- b. TM 9-1370-207-10.
- c. TM 9-1370-208-10.
- d. TM 43-0001-37.

1-9. Data

The group number listed in table 1-1 reflects authorized maintenance functions indicated in section II appendix B.

Table 1-1. Military Pyrotechnics Data

Name	Model designation	DODIC	Group No.
Cartridge, Photoflash	M112A1: 1-second delay 2-second delay 4-second delay	L135 L136 L137	0101
Cartridge, Photoflash	M123A1: 2-second delay 4-second delay 6-second delay	L139 L140 L141	
Cartridge, Photoflash	M121	L138	
Practice	M124	L142	
Flare, Airport	M76	L425	0201
Flare, Trip	M49A1	L495	0202
Flare, Aircraft Countermeasure	M206	L410	0203
Signals			0301
Illumination, Aircraft			
Double star,			
Red-Red	AN-M37A2	L225	
Yellow-Yellow	AN-M38A2	L226	
Green-Green	AN-M39A2	L227	
Red-Yellow	AN-M40A2	L228	
Red-Green	AN-M41A2	L229	
Single star,			
Red	AN-M43A2	L231	
Yellow	AN-M44A2	L332	
Green	AN-M45A2	L223	
Yellow Tracer,			
Double Star,			
Red-Yellow	AN-M53A2	L234	
Green Tracer,			
Double Star,			
Red-Red	AN-M54A2	L235	
Green-Red	AN-M55A2	L236	
Red Tracer, Double Star,			

Table 1-1. Military Pyrotechnics Data—Continued

Name	Model designation	DODIC	Group No.
Green-Green	AN-M56A2	L237	
Red-Red	AN-M57A2	L238	
Kit, Personnel:			
Red	M185	L116	0302
Various colors	M186	L117	
Kit, Personnel Distress:			
Foliage Penetrating, Red ¹		L119	0310
Illumination, Ground:			0303
Red	M187	L278	
White	M188	L279	
Green	M189	L280	
Amber	M190	L281	
Green Star, Cluster	M125A1	L314	0304
Red Star Cluster	M158	L306	
White Star, Cluster	M159	L307	
Red Star, Parachute	M126A1	L311	
White Star, Parachute	M127A1	L312	
Green Star, Parachute	M195	L305	
Red Star, Parachute	M131	L277	0305
Green Star, Parachute	M19A2	L310	0306
Illumination Marine:			
Two Star, Red	AN-M75	L276	0307
Smoke and Illumination Marine	AN-MK 13 Mod 0	L275	0308
Smoke, Ground:			0306
Red	M62	L320	
Yellow	M64	L322	
Green	M5	L318	
Violet	M66	L321	0306
White	M166	L340	0309
Green	M167	L341	
Red	M168	L342	
Yellow	M169	L343	
Green, Parachute	M128A1	L324	0304
Red, Parachute	M129A1	L323	
Yellow, Parachute	M194	L293	0304
Simulators:			
Atomic Explosion	M142	L605	0401
Detonation Simulator, Explosive	M80	L378	0402
Booby Trap,			0403
Flash	M117	L598	
Illuminating	M118	L599	
Whistling	M119	L600	

Table 1-1. Military Pyrotechnics Data—Continued

Name	Model designation	DODIC	Group No.
Simulators:—Continued			
Flash, Artillery	M110	L596	0404
Flash, Artillery	M21	L602	0410
Pyrotechnic, Cartridge: 50mm: ²	M800	L602	0411
Hand Grenade	M116A1	L601	0405
Projectile Air Burst	M27A1B1	L351	0406
Projectile Air Burst	M74 or M74A1	L366	0407
Projectile Air Burst Charge, Smoke Puff, White Primer, Percussion Cap		L373 L130	0408
Projectile Ground Burst	M115A2	L594	0409
Simulator, Launching, Anti- Tank Guided Missile and Rocket	M22	L367	0412
Miscellaneous Pyrotechnics:	M72	L506, 10-minute L507, 15-minute L508, 20-minute	0501
Fuse, Warning			
Railroad			
Marker, Location, Marine:	AN-M59	L582	0502
Dye			
Starter, Fire	M2	L621	0503

NOTES:

¹ This Signal Kit is a component of the survival kit vest type SRU-21/P.² Use Simulators Flash Artillery, M21 when stocks of Pyrotechnic, Cartridge: 50mm are exhausted.

CHAPTER 2

MAINTENANCE INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF MATERIEL

2-1. General

Upon receipt of military pyrotechnics, verify items against requisition list. If markings on box conflict with nomenclature of item requisitioned, check with pyrotechnic supply personnel to determine if an issue error has been made.

2-2. Precautions

All standard precautions for care and handling of ammunition are applicable to military pyrotechnic. For specific precautions, refer to paragraphs 1-4 and 1-5.

2-3. Inspection of Packaging Materials

a. General. Inspection at organizational level consists of a visual check of packaging materials. Do not open any moisture-proof container or barrier bag, because the item must be protected from moisture until just prior to use.

b. Packaging Defects. Specific inspection criteria

and identification of defects (as acceptable, repairable or irreparable) are outlined in table 2-1. The most commonly encountered packaging defects are listed below:

- (1) Outer containers (boxes) damaged, weathered, or rotted to the extent contents are not protected.
- (2) Inner container damaged to the extent contents are not protected or cannot be readily removed.
- (3) Container cap or closure insecure to the extent contents are not protected.
- (4) Inner containers wet (except metal), rusted, moldy or mildewed.
- (5) Hardware or banding loose, missing, broken, or ineffective.
- (6) Handle or cleat missing or broken.
- (7) Contents loose to the extent item may be damaged in handling.

Table 2-1. Inspection Criteria for Packaging
Wooden Boxes and Crates

Item	Acceptable	Repairable	Irreparable
Hardware	Operative and tight. Nails, screws and fasteners present and in good condition.	Inoperative or loose. Nails, screws, and fasteners which can be replaced or properly sealed.	None. None.
Ends	Free from damage.	Broken or missing cleats and handles.	Damage which requires disassembly of box.
Wood	Splits less than 3 inches long no closer than 1 inch to edge of board or adjoining split. The board must be secured by at least one nail on each side of the split when it extends to the end of the board. Warping which does not prevent sealing of box or insertion of required ammunition. Light mold which can be brushed off. Mildew stains which do not effect legibility of markings.	Splits over 3 inches but no closer than 1 inch to edge or adjoining split, or 1/8-inch wide, which can be repaired by use of corrugated fasteners. None. None.	Splits closer than 1 inch to edge of board or adjoining split or over 1/8-inch wide. Warping which prevents insertion or removal of rounds and/or sealing of the box. Excessive mildew and mold which cannot be removed and which render markings illegible.

Table 2-1. Inspection Criteria for Packaging - Continued

Item	Acceptable	Repairable	Irrepairable
Wood — Continued	Sound tight knots the diameter of which do not exceed 1/3 the width of the board. Skids securely attached to box or crate. Knots no greater than 1/4 the width of skid.	None. Loose skids.	Holes or loose knots which exceed 1 1/2 inches in largest diameter or 1/3 width of board. Knots greater than 1/4 the width of skid.
Tie wires	Light rust, removable with fine sandpaper.	None.	Broken, excessive rust.
Strapping	Present and unweakened by rust or distortion.	Missing, rusted or distorted.	None.
Painting and marking.	Marking legible, correct, and complete. Painted orange if light box.	Light box, Reused box, marking illegible. Marking on box not in agreement with marking on inner packaging. Marking incomplete (see para 2-3c).	None.
Metal ends, wood or fiber container	Minor rust.	None.	Perforations, excessive rust or ends which are crushed or not securely crimped to body.
Body and cap, wood or fiber container	No opening through which moisture could penetrate to item. No hole of any kind. No mold or mildew. Slight accumulation of dirt.		Holes, perforations, punctures, tears, cuts, loose seals. Cuts, tears or gouges closer than 1 inch to closure, more than 1/2 square inch in area, or through all impregnated layers.
	No mold, mildew or rot. Slight accumulation of dirt. Free from wrinkles caused by looseness between layers.		Molded or mildewed. Heavy accumulation of dirt.
	Blisters with combined area totaling less than 1/2 square inch.		Molded, mildewed or rotted. Heavy accumulation of dirt.
	No moisture absorption.		Wrinkled or peeling.
Barrier material.		None.	
		None.	Blisters with combined area of more than 1/2 square inch. Wet or soft containers.
	<i>Metal containers (except drum for M142 Atomic Explosion Simulator)</i>		
Body and Cap	Minor dents. Minor rust.	None. None.	Deep dents or scoring in drum. Rust which has caused pitting and perforations.
	No hole of any kind	None.	Puncture.
	<i>Steel Drum for M142 Atomic Explosion Simulator</i>		
	Marking legible and complete.	Marking illegible. Marking incomplete (see para 2-3c).	None.
Drum.	Dents, not broken through. Minor rust. No hole of any kind	None. Major rust, not broken through. None.	Dents broken through. Major rust on inside. Puncture.

c. The following information must be legible on each box; and on steel drum of M142 Atomic Explosion Simulator (see fig. 2-1).

(1) National (or Federal) Stock Number (NSN or FSN).

(2) Department of Defense Identification Code (DODIC) (repeated on ends of box).

(3) Department of Transportation (DOT) designation.

(4) Quantity.

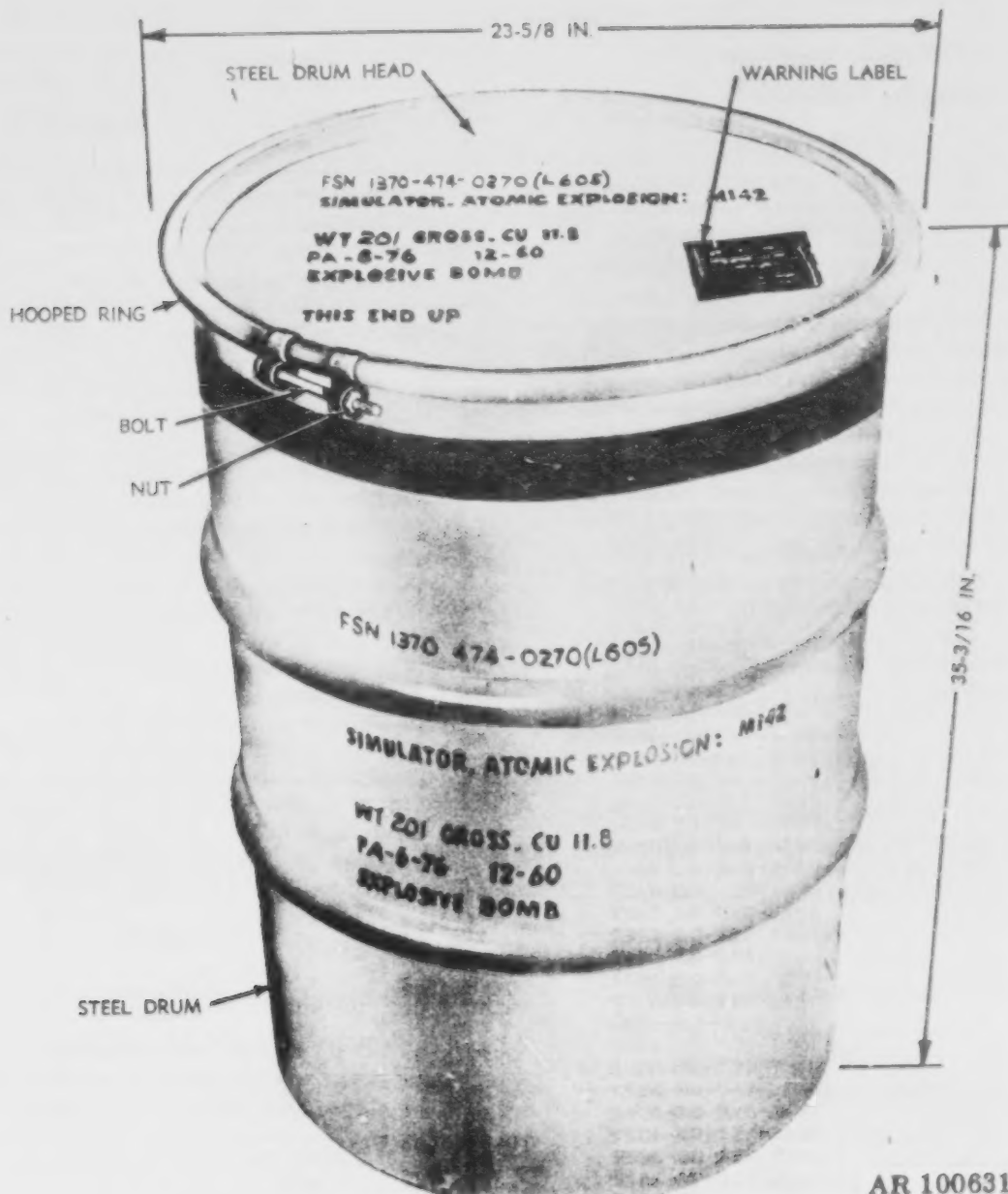
(5) Nomenclature.

(6) Lot number (repeated on ends of box).

(7) Month and year loaded.

(8) Gross weight.

(9) Cubical displacement.



AR 100631

Figure 2-1. Atomic explosion simulator M142.

2-4. Corrective Action

a. Make repairs as instructed in the following paragraphs. If serviceable packing has been saved, it may be used instead of making repairs, provided that markings on boxes are changed to agree with contents.

b. If moisture-proof container or barrier bag is penetrated, i.e., hole, tear, perforation, puncture, or cut, forward items contained therein to authorized personnel for disposal. The items have probably been damaged by moisture.

c. Before repairing a damaged box, except for simple re-marking, remove contents.

2-5. Unpacking Procedures

CAUTION

Do not open barrier bags or hermetically sealed containers until pyrotechnic items are to be issued. Exposure to moisture in the air can result in duds or other malfunctions.

a. *General.* Organizational maintenance personnel will save some boxes and packing material for immediate reuse. Contact the direct support unit for disposition of remaining boxes. If boxes are needed and none are available, request boxes from direct support units. For repackaging procedures, refer to paragraph 2-15.

b. *Pallets.*

WARNING

Wear gloves and safety glasses or goggles when cutting and handling metal strapping. Avoid being struck by ends of strapping when tension is released.

(1) Cut strapping with metal cutting shears. Never attempt to break strapping by prying or twisting, this can damage the boxes and their contents.

(2) Remove boxes from pallet.

(3) Dispose of strapping and nonrecoverable materials. Contact the direct support unit for disposition of serviceable pallets and components.

c. *Wooden Ammunition Packing Boxes* (fig. C-2).

WARNING

To prevent injury, release tension on steel strapping by pressing down on top of box while cutting straps on side of box in (1) below.

(1) Cut steel strapping with metal shears. Remove and dispose of strapping. Never attempt to break strapping by prying or twisting, this can damage the boxes and their contents, and cause possible injury to personnel.

(2) Cut metallic seal with pliers. Discard seal.

(3) Turn hasp catch and open hasps on hinge and hasp boxes, or pull out on spring latch to release on spring latch boxes.

(4) Lift box top and remove top padding. Note top position for reclosing on spring-latch boxes.

(5) Remove inner packs.

d. *Barrier Bag.*

(1) Cut barrier bag open along edge with most excess material as close to sealed edge as possible.

(2) Cut or remove tape and open inner container.

(3) Remove padding, if any.

(4) Remove items. If all items are not removed, close and reseal barrier bag with adhesive tape. (Refer to Appendix D for suitable size tape.)

e. *Hermetically Sealed Container.*

(1) Using key attached to container, remove sealing strip.

(2) Remove top of container.

(3) Remove any padding pieces from container.

(4) Remove item.

f. *Fiber Container.*

(1) Remove adhesive tape.

(2) Remove top of container.

(3) Remove any padding pieces from container.

(4) Remove item.

(5) Save all containers—when possible—for repack.

Section II. TOOLS AND EQUIPMENT

2-6. Common Tools and Equipment

Standard and commonly used tools and equipment having general application to military pyrotechnics are authorized for issue by tables of

organization and equipment (TOE).

2-7. Repair Parts and Special Tools

Repair parts and special tools required at organizational level are listed in appendix C.

Section III. MAINTENANCE

2-8. General

Organizational maintenance is performed by designated personnel in using units and is primarily

preventive in nature. It is performed to prevent deterioration of pyrotechnics due to rough handling and exposure. Direct support units may be

called upon to provide technical advice, assistance, packing materials, and consumable supplies for accomplishing maintenance. Responsibilities of organizational maintenance units are limited to those functions listed in section II, appendix B.

2-9. Consumable Supplies

a. Paint, cleaning compounds, and other consumable supplies authorized for use by organizational maintenance personnel are listed in appendix D.

b. Consumable supplies should be requisitioned through normal supply channels on an as-required basis.

2-10. Maintenance of Box Hardware

a. *Repair of Damaged Hardware.* Hardware which has been damaged to the point that is inoperable is usually irreparable; however, minor damage can usually be corrected by straightening, as follows:

(1) Using pliers carefully, bend damaged item until its configuration is the same as the serviceable item.

(2) Test repaired hardware for proper functioning.

b. *Replacement of Irreparable Hardware.* Hardware which cannot be repaired can be replaced with a serviceable item cannibalized from an unserviceable container, as follows:

(1) Using a screwdriver, remove unserviceable hardware.

(2) Attempt to reinstall serviceable hardware in existing holes. Secure with screws.

(3) If screws are missing or cannot be tightened in existing holes, proceed as follows:

(a) Replace missing screws with others obtained from an unserviceable box.

(b) If screws cannot be tightened, move hardware (with box top in place) to a different location where screws can be secured. If necessary, carve notch to accommodate hinge pin.

(c) Mark location for attaching screws and remove hardware.

(d) Drive and remove a small nail at each location to provide a pilot hole.

(e) Place hardware and screws in position and secure.

c. *Removing Rust or Corrosion from Hardware.*

(1) Remove rust or corrosion from hardware by first brushing with a wire brush.

(2) Cover with primer or paint.

d. *Replacing Broken, Loose, or Deteriorated Strapping.*

(1) Cut pieces of $\frac{3}{8}$ -inch banding of sufficient length to go around box plus about 6 to 8 inches.

(2) Position strap(s) under box.

(3) Insert one strap end into strap stretcher

so that strap is held firmly by stretcher, with about 3 inches of strap protruding.

(4) Place clip over strap end.

(5) Thread loose end of strap through clip and into stretcher head.

(6) Tighten strap by repeated movement of ratchet lever, until edges begin to cut into box.

(7) Using banding crimper, crimp clip in two places.

(8) Release locking pawl on stretcher and slide stretcher out.

(9) Cut off excess strapping.

(10) Repeat (3) through (9) above, for each strap.

2-11. Maintenance of Boxes

a. *Repair of Cracks and Splits in Wood.*

(1) Hold board tight so that the crack or split is closed.

(2) Hammer corrugated fasteners into wood at 4- to 6-inch intervals. Fastener should be centered across crack.

b. *Repair of Broken Cleats or Wood Handles.*

(1) Remove broken cleat with claw hammer or pry bar.

(2) Remove serviceable cleat with claw hammer or pry bar from an otherwise unserviceable box.

(3) Position serviceable cleat on box and secure with 3 to 5 small nails.

(4) Bend nails over inside of box with hammer.

c. *Repair of Rope or Strap Handles.*

(1) Remove cleats holding handle with claw hammer or pry bar.

(2) Remove serviceable handle from an otherwise unserviceable box by removing the holding cleats with claw hammer or pry bar.

NOTE

Do not remove nails or staples attaching handle to cleats.

(3) Position serviceable handle and cleats and attach to box with 3 to 5 nails in each cleat.

(4) Bend nails over inside box with hammer.

d. *Painting of Wood Boxes.* Normally, used boxes will not be painted except to obliterate previous markings or to indicate less than full pack (see para. 2-14).

2-12. Marking of Boxes

a. Normally box remarking at the organizational level will be a touch-up operation. Faded or damaged box markings may be restored, using a waterproof black ink marker or a small brush and paint. Minor changes, such as a change of lot number to reflect the items actually repacked in a box, may be made by merely crossing out the incorrect number(s) and neatly printing the correct one(s).

immediately adjacent, using a waterproof black ink marker or a small brush and paint.

b. If it is necessary to completely re-mark a box:

(1) Determine exactly what must be marked on the box and in what order it must be placed. Refer to paragraph 2-3c and/or copy from the original box, an identical box, or the inner packaging. Note the size of the letters used and the space between lines.

(2) Cover the old, unwanted markings with a coat of marking obliterating lacquer and allow it to dry.

(3) If possible, have a stencil cut by an ammunition company or other nearby organization having the facilities. Using masking tape, secure the stencil over the area to be marked and spray or brush black paint evenly over it to mark the box. If a stencil is not available, proceed to (4) below.

(4) Using a pencil and any available straight edge, draw a series of parallel lines spaced as noted in (1) above.

(5) Neatly letter the required markings, using a waterproof black ink marker or a small brush and paint.

c. Check markings for accuracy and legibility.

d. Allow markings to dry before handling.

2-13. Cleaning, Touch-up, and Marking of Steel Drum for M142 Atomic Explosion Simulator

a. Make diagram of markings and record all markings.

b. Remove dirt, mud, and and other foreign material, using rags or brushes. Use rags dipped in alcohol to remove grease.

c. Using wire brush, remove flaked, chipped, blistered or peeling paint.

d. Remove rust, using wire brush or sandpaper.

e. Allow alcohol-cleaned surfaces to dry thoroughly before painting.

f. Apply primer to all bare metal.

g. Allow primed surfaces to dry thoroughly.

h. Apply white enamel to primed surfaces, or brown lacquer to the band.

i. Allow freshly painted surfaces to dry thoroughly.

j. Mark in accordance with paragraph 2-12.

k. Check markings for accuracy.

l. Allow markings to dry before handling.

2-14. Painting and Marking of Boxes with Light Loads

NOTE

Organizational maintenance personnel will apply this procedure only when boxes with less than full contents are returned

to storage area or transported to new location. When painting of a light box is required, re-marking (except quantity) may be avoided by applying masking tape over markings prior to painting.

a. Check contents with markings on box to verify that nomenclature and lot number are correct.

b. Make diagram of markings on box and record all markings except quantity figure (or cover markings per note above).

c. Apply orange enamel to all outer surfaces of box. If enamel is not available, use orange lacquer.

d. When box is dry, re-mark as diagrammed (b above) (see para 2-12), or remove masking tape.

e. Count quantity of items in box and mark number on box in same position as original quantity figure.

f. Print words LIGHT BOX on each side of box, using approximately the same size letters as the original markings.

2-15. Repacking Procedures

a. General.

(1) Repacking will depend on the availability of packaging materials. Additional packaging materials will be obtained from direct support units. Table 2-2 contains packing and marking data for standard packaging.

(2) Assure that proper nomenclature and lot number for items are marked on both inner and outer packages. Partially filled boxes must be painted and marked as instructed in paragraph 2-14.

(3) For Simulator Launching, Anti-Tank, Guided Missile and Rocket, M22 repacking, use available packing materials or original packing if possible. NSN has not been assigned to the packing materials yet.

b. Barrier Bag.

(1) Place protective materials at sensitive points of item.

(2) Place item(s) into bag or carton.

(3) Close carton and seal with tape.

(4) Wrap carton in barrier material.

(5) Seal barrier material or bag with tape (refer to Appendix D for correct tape type).

c. Hermetically Sealed Container.

(1) Slide item into container.

(2) Use adequate filler material to assure a tight fit.

(3) Cover any sensitive component with padding.

(4) Place top on container.

(5) Seal with plastic filament tape or black nylon tape by wrapping around the joint in a double layer and folding edges over top.

Table 2-2. Packing and Marking Data

Item	Wood packing box			Cube (ft)
	Items per box	Items per inner pack	Total weight (lb)	
CARTRIDGES				
Cartridge, Photoflash: M112A1	40	10	75	1.5
Cartridge, Photoflash: M123A1	12	3	74.4	1.7
Cartridge, Photoflash, Practice: M121	40	10	75	1.5
Cartridge, Photoflash, Practice: M124	12	3	74.4	1.7
FLARES				
Flare, Surface: Airport, M76	1	1	42	1.0
Flare, Surface: Trip, M49A1	32	32	46.5	1.74
Flare, Countermeasure: Aircraft, M206	100	50	67	1.3
SIGNAL				
Signal, Illumination, Aircraft	80	10	57.5	1.6
Double Star,				
AN-M37A2(Red-Red)				
AN-M38A2(Yellow-Yellow)				
AN-M39A2(Green-Green)	80	10	57.5	1.6
AN-M40A2(Red-Yellow)	80	10	57.5	1.6
AN-M41A2(Red-Green)	80	10	57.5	1.6
Single Star,				
AN-M43A2(Red)	80	10	57.5	1.6
AN-M44A2(Yellow)	80	10	57.5	1.6
AN-M45A2(Green)	80	10	57.5	1.6
TRACERS				
Tracer, Double Star,				
AN-M53A2(Yellow Tracer, Red-Yellow)	80	10	57.5	1.6
AN-M54A2(Green Tracer, Red-Red)	80	10	57.5	1.6
AN-M55A2(Green Tracer, Green-Red)	80	10	57.5	1.6
AN-M56A2(Red Tracer, Green-Green)	80	10	57.5	1.6
AN-M57A2(Red Tracer, Red-Red)	80	10	57.5	1.6
SIGNALS				
Signal, Kit, Personnel Distress:				
M185(Red)	240	60	135	5.7
M186(various colors)	240	60	135	5.7
Foliage Penetrating(Red) DODIC L119	100	100	90	8
Signal, Illumination, Ground:	1,250	50	81	2.1
M187(red)				
M188(white)				
M189(green)				
M190(amber)				
Signal, Smoke, Ground:	240	6	56	1.2
M166(white)				
M167(green)				
M168(red)				
M169(yellow)				
Signal, Illumination, Ground: Green Star	30	1	62	1.8
Parachute, M19A2				
Signal, Smoke, Ground:	30	1	62	1.8
M62(red)				
M64(yellow)				
M65(green)				
M66(violet)				

Table 2-2. Packing and Marking Data — Continued

Item	Wood packing box			Cube (ft)
	Items per box	Items per inner pack	Total weight (lb)	
SIGNALS -- Continued				
Signal, Illumination, Ground:	36	1	55	1.5
Green Star, Cluster, M125A1				
Red Star, Cluster, M158				
White Star, Cluster, M159				
Red Star Parachute, M126A1				
White Star, Parachute, M127A1				
Green Star, Parachute, M195				
Signal, Smoke Ground:	36	1	55	1.5
Yellow, Parachute, M194				
Green, parachute, M128A1				
Red, Parachute, M129A1				
Signal, Illumination, Ground:	25	1	50	1.2
Red Star, Parachute, M131				
Signal, Illumination, Marine: Two Star, AN-MK75	100	5	57	1.68
Signal, Smoke and Illumination, Marine; AN-MK13Mod 0 Simulators	108	12	90	3.2
Simulator, Projectile Air Burst: Charge, Smoke, Puff, White	200	5	79	2.48
Simulator, Projectile Air Burst: M27A1B1	36	9	51.3	2.28
Simulator, Projectile, Air Burst: M74A1	80	10	57.5	1.6
Simulator, Boobytrap:	150	5	47	1.5
Flash, M117				
Illuminating, M118				
Whistling, M119				
Simulator, Atomic Explosion: M142	None	1	201	11.8
Simulator, Projectile, Ground Burst: M115A2	100	5	67.35	3.8
Simulator, Flash, Artillery: M110	30	1	55	1.8
Simulator, Flash, Artillery: M21	162	9	94.6	4.34
Simulator, Pyrotechnic, Cartridge, 50MM: M800	162	9	94.6	4.34
Simulator, Hand Grenade: M116A1	150	5	65	3.1
Detonation Simulator, Explosive: M80	2,500	50	68	3.8
Simulator, Launching, Anti-Tank, Guided Missile and Rocket, M22	240	10	40	1.5
MISCELLANEOUS PYROTECHNICS				
Fusee, Warning, Railroad: Red, M72	40	10	46	1.3
10-minute, 15-minute, 20-minute				
Marker, Location, Marine: dye, AN-M59	30	10	70	4.4
Starter, Fire: M2	500	1	35	1.12

d. *Wooden Box.*

(1) Verify that markings on inner pack and box agree.

(2) If necessary, organizational maintenance will re-mark box as instructed in paragraph 2-12 to agree with contents.

(3) Place inner pack(s) into box. Position items to balance load for carrying.

(4) Use adequate filler material to assure a tight pack.

(5) Close top.

(6) On hinge and hasp box, close hasp and rotate hasp catch to latch position.

(7) Secure latch or hasp catch with piece of metallic seal wire, if available, otherwise, use light wire.

(8) Organizational maintenance personnel will mark partially filled boxes in accordance with paragraph 2-14.

e. *Fiber Container.*

(1) Holding container at a slight angle (30°-60°), insert item into the container and seat firmly.

(2) Place padding on item as required. Secure with tape, if necessary.

(3) Slide on end cap.

(4) Seal end cap by covering joint with two layers of plastic filament tape or black nylon tape.

CHAPTER 3

SHIPMENT AND STORAGE

Section I. SHIPMENT

3-1. Precautions

Pyrotechnic devices must be adequately protected during shipment. Damaged, contaminated, or otherwise degraded material may be dangerous and its usefulness may be impaired.

3-2. Transportation

a. Block and brace pyrotechnic packages being transported in trucks, jeeps, and other tactical vehicles. Blocking and bracing must be adequate to withstand sudden stops and starts, as well as off-road operations.

b. If packing is broken or damaged in shipment, in-

spect as instructed in paragraph 2-3 and take corrective action as indicated.

3-3. Handling

CAUTION

Improper handling of pyrotechnic materials can affect their reliability and safety, creating conditions hazardous to personnel.

Do not roll, drop, throw, or subject boxes to rough handling.

Section II. STORAGE

3-4. Precautions

a. Select level, well-drained sites free from readily ignitable and flammable materials.

b. Provide nonflammable or fire-resistant overhead covers (e. g., tarpaulin) for all items. Maintain overhead space of approximately 18 inches between cover and items. Keep cover at least 6 inches from pile on the ends and at sides to permit circulation of air.

c. Temporarily store unserviceable items in a segregated area.

d. Temporarily store items returned by the using unit in a segregated area for inspection and repacking.

3-5. Data

a. *Field Storage Compatibility Groups.*

(1) Storage compatibility groups consist of primary groups of pyrotechnic items, with comparable storage risks grouped together for storage in the field. Storage safety procedures are based on the following:

(a) A Field Storage Unit (FSU) is composed of a group of stacks. The maximum quantity of items stored in each stack, within each FSU, and the minimum distance between FSU's are specified in table 3-1.

(b) Normally, only one kind of pyrotechnic material is stored in a stack. Items should be arranged in stacks in the best manner to best facilitate inventory and inspection. Where camouflage is a consideration, stacks may be stepped in toward the top (terraced or pyramid stacking) to decrease shadows.

(2) All pyrotechnic items in this technical manual are in field storage category D.

Table 3-1. Quantity-Distance for Field Storage

Gross tons per stack	Gross tons per FSU	Minimum distance in feet between			
		Stacks unbarricaded	Stacks barricaded	FSU unbarricaded	Cate- gories
Less than 10	400	40	30	300	750
10-20 maximum	400	50	40	300	750

b. Quantity-Distance Table for Field Storage. Data specified in table 3-1 is to be used as a guide when storing military pyrotechnics in the field only. Any reduction of distances or increase in tonnage will increase the probability of loss of life and pyrotechnic devices.

c. Permanent Installation Storage. For permanent storage, standard quantity-distance classes and storage compatibility groups given in TM 9-1300-206 apply.

3-6. Procedures

a. When stacking, use heavy, well-supported dunnage to prevent the stack from sinking, and to keep the bottom tier off the ground.

b. Use a hardstand of gravel and sand, when possible, rather than excessive dunnage.

c. Allow at least a 6-inch clearance beneath the pile for air circulation.

d. Dig suitable trenches around stacking area to prevent water from flowing under the pile.

APPENDIX A

REFERENCES

A-1. Publication Indexes

The following publication indexes should be consulted frequently for the latest changes or revisions of references given in this appendix and for new publications relating to the materiel covered in this manual:

Index of Administrative Publications	DA Pam 310-1
Index of Blank Forms	DA Pam 310-2
Index of Doctrinal, Training and Organizational Publications	DA Pam 310-3
Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrication Orders	DA Pam 310-4
Index of Supply Catalogs and Supply Manuals (excluding types 7, 8, and 9)	DA Pam 310-6

A-2. Technical Manuals

Ammunition and Explosives Standards	TM 9-1300-206
Destruction of Conventional Ammunition and Improved Conventional Munitions to Prevent Enemy Use	TM 750-244-5-1
Operator's Manual for Pyrotechnic Signals	TM 9-1370-206-10
Operator's Manual for Pyrotechnic Simulators	TM 9-1370-207-10
Operator's Manual for Photo Flash Cartridges, Surface Flares, and Miscellaneous Pyrotechnic Items	TM 9-1370-208-10
Operator, Organizational, Field, and Depot Maintenance Manual—Ground Signal Projector M1A1, Hand Pyrotechnic Projector M9, and Pyrotechnic Pistol AN-M8 with Pyrotechnic Pistol Mount M1	TM 9-1095-201-15
Operator's Aviation Unit Maintenance and Aviation Intermediate Maintenance Manual (Including Repair Parts and Special Tools List) for Dispenser, General Purpose Aircraft: XM130	TM 9-1095-206-13&P
The Army Maintenance Management System (TAMMS)	TM 38-750
Operator's and Organizational Maintenance Manual (Including Repair Parts and Special Tools List): Flare, Aircraft: Parachute, White, MK 45 MOD 0 (FSN 1370-088-5658) L473; Flare, Aircraft: Parachute, MK 45 MOD 0 with Adapter for Dispenser XM19 (FSN 1370-461-1526) L424; and Dispenser, Flare: XM19 (FSN 1370-179-6011) L106	TM 9-1370-201-12
Army Ammunition Data Sheets, Guns, Howitzers, Mortars, Recoilless Rifles, Artillery Fuzes (FS 1310, 1315, 1320, 1390)	TM 43-0001-28
Army Ammunition Data Sheets for Military Pyrotechnics (FS 1370) ..	TM 43-0001-37

A-3. Field Manuals

Chemical reference Handbook	FM 3-8
Explosives and Demolition	FM 5-25
Grenades and Pyrotechnic Signals	FM 23-30

A-4. Army Regulations

Accident Reporting and Records	AR 385-40
Malfunctions Involving Ammunition and Explosives	AR 75-1
Regulations for Firing Ammunition for Training, Target Practice, and Combat	AR 385-63
Ammunition and Explosives Safety Standards	AR 385-64
Reporting of Transportation Discrepancies in Shipments	AR 55-38
Reporting of Item Discrepancies Attributable to Shippers	AR 735-11-2

A-5. Blank Forms

Accident Report	DA Form 285
Ammunition Condition Report	DA Form 2415
Discrepancy in Shipment Report	SF 361
Equipment Maintenance Log	DA Form 2409
Maintenance Request	DA Form 2407
Recommended Changes to Publications and Blank Forms	DA Form 2028
Report of Discrepancy	SF 364
Fire Report	DA Form 3985

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. General

a. The Maintenance Allocation Chart designates responsibility for the performance of maintenance functions.

b. Only the lowest level of maintenance authorized to perform a maintenance function is indicated.

c. A maintenance function assigned to a maintenance level will automatically be authorized to be performed at any higher maintenance level.

d. A maintenance function that cannot be performed at the assigned level of maintenance for any reason may be evacuated to the next higher level. Higher maintenance levels will perform the maintenance functions of lower maintenance levels, when required, or directed by the appropriate commander.

B-2. Maintenance Functions

The implementation of maintenance tasks will be consistent with the assigned maintenance in accordance with the following definitions.

a. *Inspect*. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. *Test*. To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. *Service*. Operations required periodically to keep an item in proper operating condition.

(1) *Unpack*. To remove item from packing box for service or when required for the performance of other maintenance operations.

(2) *Repack*. To return item to packing box after service or other maintenance operations.

(3) *Clean*. To rid the item of contamination.

(4) *Touch up*. To spot paint scratched or blistered surfaces.

(5) *Mark*. To restore obliterated identification.

d. *Install*. To emplace, seat, or fix into position an item in a manner to allow the proper functioning of the equipment.

e. *Adjust*. To maintain within prescribed limits by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

f. *Renovate*. To restore item to serviceable condition.

(1) *Paint*. To repaint the entire item.

(2) *Repair*. To restore serviceability to an item by correcting specific damage, fault, malfunction, or failure through the application of maintenance services or other maintenance actions.

(3) *Replace*. To substitute a serviceable component in a manner to allow the proper functioning of equipment.

B-3. Explanation of Format

a. *Group Number*. Column 1 lists the group numbers, the purpose of which is to identify specific devices or groups of similar devices.

b. *Functional Group*. Column 2 lists the item names of parts and assemblies on which maintenance is authorized.

c. *Maintenance Function*. Column 3 lists the twelve maintenance functions defined in B-2 above. Capital letters are inserted under appropriate maintenance functions, on line with each functional group, to indicate the lowest level of maintenance authorized to perform that function. The symbols used and the maintenance category that each represents are as follows:

Symbol	Explanation
C	Operator/Crew
O	Organizational
F	Direct Support
H	General Support
D	Depot

d. *Tools and Equipment and Remarks*. Column 4, Tools and Equipment, and Column 5, Remarks, are not applicable.

Section II. MAINTENANCE ALLOCATION CHART FOR PYROTECHNICS

(1)	(2)	(3)												(4)	(5)	
Group No.	Function group	Maintenance function												Tools and equipment	Remarks	
		Inspect	Test	Service						Install	Adjust	Renovate				
				Unpack	Repack	Clean	Touch up	Mark	Paint			Repair	Replace			
GROUP 01, CARTRIDGES																
0101	Cartridge, Photoflash: M112A1; M123A1; PRACTICE, M121; M124															
	Cartridge	C	D	C	O	-	-	-	C	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O			
GROUP 02, FLARES																
0201	Flare, Surface: Airport, M76															
	Flare	C	D	C	O	-	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O			
0202	Flare, Surface: Trip M49A1															
	Flare	C	D	C	O	-	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O			
0203	Flare, Aircraft: Countermeasure; M206															
	Flare	O	-	O	O	C	-	-	C	-	-	-	-	-		
GROUP 03, SIGNALS																
0301	Signal, Illumination, Aircraft: All															
	Signal	C	D	C	O	-	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O			
0302	Signal Kit, Personnel Distress M185,M186															
	Signal Kit	C	D	C	O	-	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O			
0303	Signal, Illumination, Ground: M187,M188,M189,M190															
	Signal	C	D	C	O	-	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O			
0304	Signal, Illumination, Ground: Cluster, M125A1,M158,M159, Signal Illumination, Ground, Parachute: M126A1,M127A1,M195															
	Signal, Smoke, Ground: Parachute, M128A1,M129A1, M194															
	Signal	C	D	C	O	-	-	-	-	-	-	-	-	-		
0305	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O			
	Signal, Illumination, Ground: Parachute M131															
	Signal	C	D	C	O	-	-	-	-	-	-	-	-	-		
0306	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O			
	Signal, Illumination, Ground: Green Star, Parachute M19A2, Signal, Smoke, Ground: M62,M64,M65,M66															
	Signal	C	D	C	O	-	-	-	-	-	-	-	-	-		
0307	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O			
	Signal, Illumination, Marine: Two Star, Red AN-M75															
	Signal	C	D	C	O	-	-	-	-	-	-	-	-	-		
0308	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O			
	Signal, Smoke and Illumination, Marine MK 13 MOD 0															
	Signal	C	D	C	O	-	-	-	-	-	-	-	-	-		
0309	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O			
	Signal, Smoke, Ground: M166,M167,M168,M169															
	Signal	C	D	C	O	-	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O			

Section II. MAINTENANCE ALLOCATION CHART FOR PYROTECHNICS—Continued

(1)	(2)	(3)											(4)	(5)	
Group No.	Function group	Maintenance function											Tools and equipment	Remarks	
		Inspect	Test	Service					Install	Adjust	Renovate				
				Unpack	Repack	Clean	Touch up	Mark			Paint	Repair			Replace
0310	Signal Kit, Personnel Distress: Foliage Penetrating (Red DODIC L119)														
	Signal Kit	C	D	C	O	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O	O	
	GROUP 04, SIMULATORS														
0401	Simulator, Atomic Explosion: M142														
	Simulator	C	D	C	O	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	O	O	-		
0402	Simulator, Detonation, Explosive, M80														
	Detonation Simulator	C	D	C	O	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O		
0403	Simulators, Explosive Boobytrap: Flash, M117: Illuminating, M118: Whistling, M119														
	Simulator	C	D	C	O	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O		
0404	Simulator, Flash, Artillery: M110														
	Simulator	C	D	C	O	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O		
0405	Simulator, Hand Grenade, M116A1														
	Simulator	C	D	C	O	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	-	-	-	-	O	O		
0406	Simulator, Projectile Airburst: M27A1B1														
	Simulator	C	D	C	O	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O		
0407	Simulator, Projectile, Airburst: M74 or M74A1														
	Simulator	C	D	C	O	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O		
0408	Simulator, Projectile Airburst: Charge, Smoke, Puff, White														
	Simulator	C	D	C	O	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O		
	Percussion Cap Primer	C	D	C	O	-	-	-	-	-	-	-	-		
0409	Simulator, Projectile Groundburst, M115A2														
	Simulator	C	D	C	O	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O		
0410	Simulator, Flash, Artillery: M21														
	Simulator	C	D	C	O	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O		
0411	Simulator, Pyrotechnic, Ctg, 50mm:														
	Simulator: M800	C	D	C	O	-	-	-	-	-	-	-	-		
	Packing Material	O	-	-	-	-	-	O	-	-	-	O	O		
0412	Simulator, Launching, Anti-Tank, Guided Missile and Rocket, M22														
	Packing Material	C	-	C	C	-	-	-	C	-	-	O	O		

Section II. MAINTENANCE ALLOCATION CHART FOR PYROTECHNICS—Continued

Section II. MAINTENANCE ALLOCATIONS															(4)	(5)
(1)	(2)		(3)											Tools and equipment	Remarks	
Group No.	Function group	Maintenance function														
		Inspect	Test	Service					Install	Adjust	Renovate					
				Unpack	Repack	Clean	Touch up	Mark			Paint	Repair	Replace			
	GROUP 05, MISCELLANEOUS PYROTECHNICS															
0501	Fusees, Warning, Railroad: Red, M72, 10, 15, and 20-minutes															
	Fusee		C	D	C	O	-	-	-	-	-	-	-			
	Packing Material		O	-	-	-	-	-	O	-	-	-	O	O		
0502	Marker, Location, Marine: Dye, AN-M59															
	Marker		C	D	C	O	-	-	-	-	-	-	-			
	Packing Material		O	-	-	-	-	-	O	-	-	-	O	O		
0503	Starter, Fire:M2															
	Starter		C	D	C	O	-	-	-	-	-	-	-			
	Packing Material		O	-	-	-	-	-	O	-	-	-	O	O		

APPENDIX C

ORGANIZATIONAL MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

C-1. Scope

This appendix lists repair parts and special tools required for the performance of organizational maintenance of pyrotechnics.

C-2. General

This appendix is divided into the following sections:

a. Repair Parts List — Section II. A list of repair parts authorized for the performance of maintenance at the organizational level.

b. Special Tools List — Section III. A list of special tools and equipment authorized for the performance of maintenance at the organizational level.

c. National Stock Number and Part Number Index — Section IV. A list in ascending numerical sequence, of all National stock numbers (NSN) appearing in the listings, followed by a list in alphabetic sequence of all part numbers appearing in the listings.

C-3. Explanation of Columns

The following provides an explanation of columns found in the tabular listings.

a. Illustration. This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustration on which the item is shown.

(2) *Item number.* The number used to identify item called out in the illustration.

b. Source, Maintenance, and Recoverability (SMR) Codes.

(1) *Source code.* Source codes (first and second positions) indicate the selections, status, and source for the listed items. The source codes are:

Code	Explanation
PA	Item procured and stocked for anticipated or known usage.
XB	Item is not procured or stocked. If not available through salvage, requisition.

(2) *Maintenance code.* Maintenance codes consist of two parts — USE code (third position) and REPAIR code (fourth position). The USE code indicates the lowest maintenance level authorized to remove, replace, and use the listed item. The REPAIR code indicates whether the item is to be repaired, and

identifies the lowest maintenance level authorized to repair the listed item. The maintenance codes are:

Use Code	Explanation
O	Support item is removed, replaced, and used at the organizational level.

Repair Code	Explanation
O	The lowest maintenance level capable of complete repair of the support item is the organizational level.
Z	Nonrepairable. No repair is authorized.

(3) *Recoverability code.* Recoverability codes (fifth position) indicate the disposition action on unserviceable items. The recoverability codes are:

Code	Explanation
O	Repairable item. When uneconomically repairable, condemn and dispose of at organizational level.
Z	Nonrepairable item. When unserviceable, condemn and dispose of at the level indicated in position 3.

c. National Stock Number. Indicates the National stock number (NSN) assigned to the item, and will be used for requisitioning purposes.

d. Part Number. Indicates the primary number used by the manufacturer which controls the design characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements.

e. Federal Supply Code for Manufacturer (FSCM). The FSCM is a five-digit numeric code listed in SB 708-42 which is used to identify the manufacturer, distributor, or Government agency that controls the design characteristics of the item. The following codes are used:

Code	Manufacturer
10001 . .	Bureau of Naval Weapons
19203 . .	US Army Armament Materiel Readiness Command
81349 . .	Military Specifications
81361 . .	Edgewood Arsenal

f. Description. Indicates the item name and any additional description required.

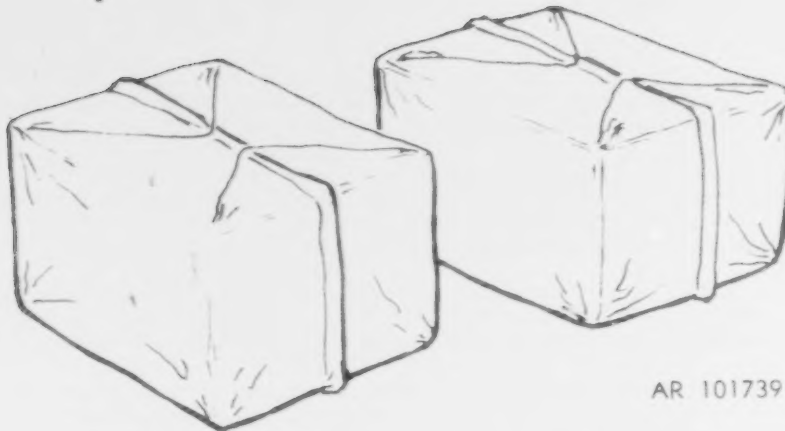
g. Unit of Measure (U/M). This is a two-character abbreviation indicating the unit upon which the allowances are based; e.g., ft, ea, pr, etc.

h. Quantity. Indicates the quantity of the item used with or on the item of equipment.

Section II. REPAIR PARTS LIST

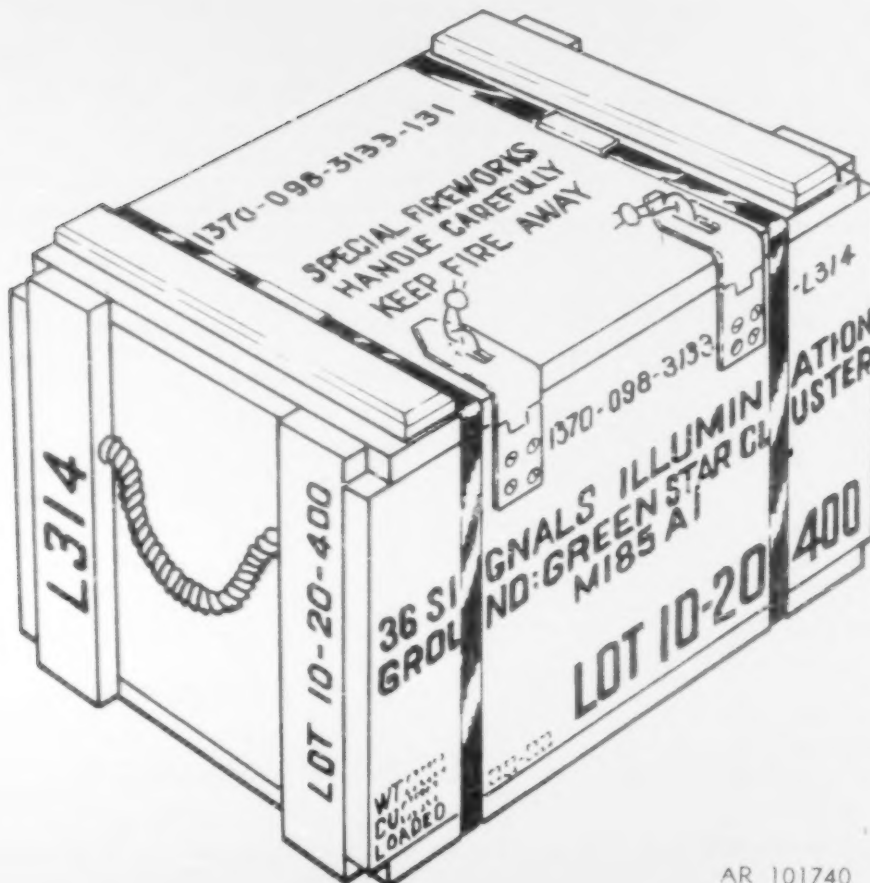
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
Illustration		SMR Code	National stock No.	Part No.	Federal supply code for manufacturing	Description	Unit of measure	Quantity incorporated in unit
(a) Fig. No.	(b) Item No.							
						GROUP 01: CARTRIDGES		
						0101: Cartridge, Photoflash: M112A1 and Cartridge, Photoflash, Practice: M121		
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-2		XB000	8140-00-145-0069	8860565	19203	BOX, PACKING, AMMUNITION	ea	1
C-1		XB000	8140-00-484-8225	8860564	19203	CARTON, PACKING, AMMUNITION	ea	1
						0101: Cartridge, Photoflash: M123A1 and Cartridge, Photoflash, Practice: M121		
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-1		XB000	8140-00-001-7369	7548472	19203	CARTON, PACKING, AMMUNITION	ea	1
C-2		XB000	8140-00-783-7707	7548473	19203	BOX, PACKING, AMMUNITION	ea	1
						GROUP 02: FLARES		
						0201: Flare, Surface: Airport, M76		
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-1		XB000	8140-00-031-7956	8864175	19203	CARTON, PACKING, AMMUNITION	ea	1
C-2		XB000	8140-00-783-7830	8864174	19203	BOX, PACKING, AMMUNITION	ea	1
						0202: Flare, Surface: Trip, M49A1		
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-1		XB000	8140-00-827-0489	8830881	19203	CARTON, PACKING, AMMUNITION	ea	1
C-2		XB000	8140-00-828-2993	8830880	19203	BOX, PACKING, AMMUNITION	ea	1
						GROUP 03: SIGNALS		
						0301: Signal, Illumination, Aircraft		
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-1		XB000	8140-00-001-9248	8836945	19203	CARTON, PACKING, AMMUNITION	ea	1
C-2		XB000	8140-00-832-0226	8836950	19203	BOX, PACKING, AMMUNITION	ea	1
						0302: Signal Kit, Personnel Distress, M185 & M186		
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-1		XB000	8140-00-001-9249	9231550	19203	CARTON, PACKING, AMMUNITION	ea	1
C-2		XB000	8140-00-783-7923	9231551	19203	BOX, PACKING, AMMUNITION	ea	1
						0303: Signal, Illumination, Ground, M187, M188, M189, and M190		
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-2		XB000	8140-00-001-9250	9234286	19203	BOX, SET-UP, PACKING, AMMUNITION INNER & OUTER*	ea	1
C-2		XB000	8140-00-783-7923	9234287	19203	BOX, PACKING, AMMUNITION	ea	1
						0304: Signal, Illumination, Ground, Cluster, M125A1, M158, M159, Parachute, M126A1, M127A1, M195: Signal, Smoke, Ground: Parachute, M128A1, M129A1, M194		
C-3		XB000	8140-00-144-9824	7548414	19203	CONTAINER, AMMUNITION, METAL	ea	1

*Inner and Outer



AR 101739

Figure C-1. Typical ammunition packing cartons in barrier bags.



AR 101740

Figure C-2. Typical ammunition packing box.

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
Illustration		SMR Code	National stock No.	Part No.	Federal supply code for manufacturing	Description	Unit of measure	Quantity incorporated in unit
(a) Fig. No.	(b) Item No.							
C-2		XB000	8140-00-824-0809	7548415	19203	BOX, PACKING, AMMUNITION 0305: Signal, Illumination, Ground: Parachute, M131	ea	1
C-3		XB000	8140-00-001-9252	8837838	19203	CONTAINER, AMMUNITION, METAL, M291	ea	1
C-2		XB000	8140-00-783-7733	8837837	19203	BOX, PACKING, AMMUNITION 0306: Signal, Illumination, Ground: Parachute, M19A2; Signal, Smoke, Ground, M62, M64, M65, and M66	ea	1
C-4		XB000	8140-00-001-9250	8866684	19203	CONTAINER, AMMUNITION, FIBER: M104A	ea	1
C-2		XB000	8140-00-783-7892	8866685	19203	BOX, PACKING, AMMUNITION 0307: Signal, Illumination, Marine: AN-M75	ea	1
C-3		XB000	8140-00-001-9253	76-1-870	19203	CONTAINER, AMMUNITION, METAL	ea	1
C-2		XB090	8140-00-780-9191	76-1-1255	19203	BOX, PACKING AMMUNITION 0308: Signal, Smoke and Illumination, Marine: MK 13 MOD O	ea	1
C-2		XB000	8104-00-038-5051	563246	10001	CONTAINER, SIGNAL	ea	1
C-1		XB000	8140-00-484-8239	593127	10001	CARTON, PACKING, AMMUNITION 0309: Signal, Smoke, Ground: M166, M167, M168, M169	ea	1
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-1		XB000	8140-00-144-9855	9210949	19203	CARTON, PACKING, AMMUNITION	ea	1
C-2		XB000	8140-00-145-0054	9210950	19203	BOX, PACKING, AMMUNITION GROUP 04: SIMULATORS	ea	1
C-5		XB000	8140-00-780-9188	8864219	19203	0401: Simulator, Atomic Explosion, M142 DRUM, FIBER, AMMUNITION 0402: Detonation Simulator, Explosive: M80	ea	1
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-1		XB000	8140-00-144-9896	8853677	19203	CARTON, PACKING, AMMUNITION	ea	1
C-2		XB000	8140-00-144-9905	8853678	19203	BOX, PACKING, AMMUNITION 0403: Simulators, Booby Trap: Flash, M117; Illuminating, M118	ea	1
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-2		XB000	8140-00-144-9841	8799712	19203	BOX, PACKING, AMMUNITION	ea	1
C-1		XB000	8140-00-144-9850	8799713	19203	CARTON, PACKING, AMMUNITION 0403: Simulator, Booby Trap: Whistling, M119	ea	1
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-1		XB000	8140-00-484-8233	8799716	19203	CARTON, PACKING, AMMUNITION	ea	1
C-2		XB000	8140-00-783-7732	8799717	19203	BOX, PACKING, AMMUNITION 0404: Simulator, Flash, Artillery: M110	ea	1
C-4		XB000	8140-00-484-8228	8880487	19203	CONTAINER, AMMUNITION, FIBER: M242	ea	1
C-2		XB000	8140-00-783-7894	8880486	19203	BOX, PACKING, AMMUNITION 0405: Simulator, Hand Grenade, M116A1	ea	1
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-2		XB000	8140-00-831-0086	8799714	19203	BOX, PACKING, AMMUNITION 0310 SIGNAL KIT	ea	1
		XB000	1370-00-490-7362		27934	PERSONNEL, DISTRESS: Foliage penetrating (Red DODIC L119). ¹	ea	1
		XB000				BAG BARRIER CARTON PACKING AMMUNITION BOX, PACKING AMMUNITION. ²	ea	1

*Inner and outer.

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
Illustration		SMR Code	National stock No.	Part No.	Federal supply code for manufacturing	Description	Unit of measure	Quantity in unit
(a)	(b)							
Fig. No.	Item No.							
C-2		XB000	8140-00-859-8024	8799715	19203	BOX, PACKING, AMMUNITION 0406: Simulator, Projectile Airburst: M27A1B1	ea	1
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-1		XB000	8140-00-001-9255	8860596	19203	CARTON, PACKING, AMMUNITION	ea	1
C-2		XB000	8140-00-832-0195	8860597	19203	BOX, PACKING, AMMUNITION 0407: Simulator, Projectile Airburst: M74 or M74A1	ea	1
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-1		XB000	8140-00-001-9248	8836949	19203	CARTON, PACKING, AMMUNITION	ea	1
C-2		XB000	8140-00-832-0226	8836950	19203	BOX, PACKING, AMMUNITION 0408: Simulator, Projectile Airburst: Charge, Smoke Puff, White	ea	1
C-4		XB000	8140-00-001-9254	76-2-71	19203	CONTAINER, AMMUNITION, FIBER	ea	1
C-2		XB000	8140-00-780-9192	20-4-72	19203	BOX, PACKING, AMMUNITION 0409: Simulator, Projectile Ground Burst: M115A2	ea	1
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	BAG, BARRIER	ea	1
C-1		XB000	8140-00-484-8234	8799711	19203	CARTON, PACKING, AMMUNITION	ea	1
C-2		XB000	8140-00-832-0193	8799710	19203	BOX, PACKING, AMMUNITION 0410: Simulator, Flash, Artillery: M21	ea	1
		XB000			19203	CONTAINER, AMMUNITION, FIBER: M242	ea	1
		XB000			19203	BOX, PACKING, AMMUNITION 0411: Simulator, Pyrotechnic, Cartridge, 50MM: M80	ea	1
		XB000			19203	CONTAINER, AMMUNITION, FIBER: M242	ea	1
		XB000			19203	BOX, PACKING, AMMUNITION 0412: Simulator, Launching, Anti-Tank, Guided Mis- sile and Rocket, M22	ea	1
C-1		XB000				CARTON, PACKING (INNER) AMMUNITION	ea	1
C-2		XB000				CARTON, PACKING (OUTER) AMMUNITION GROUP 05: MISCELLANEOUS PYROTECHNICS	ea	1
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	0501: Fuses, Warning, Railroad: M42	ea	1
C-2		XB000	8140-00-089-8634	8835159	19203	BAG, BARRIER	ea	1
C-1		XB000	8140-00-484-8237	8835158	19203	BOX, PACKING, AMMUNITION 0502: Marker, Location, Marine: Dye, AN-M59	ea	1
C-1		XB000	8105-00-256-7239	MIL-B-117	81349	CARTON, PACKING, AMMUNITION	ea	1
C-1		XB000	8140-00-484-8238	9224974	19203	BAG, BARRIER	ea	1
C-2		XB000	8140-00-783-7907	9224975	19203	BOX, PACKING, AMMUNITION 0503: Starter, Fire, M2	ea	1
C-2		XB000	8140-00-089-8664	C4-1-14	81361	BOX, WOOD	ea	1

NOTES:

1. Proprietary item, NSN 1370-00-490-7362, manufactures design control reference 6000D4047-1.
2. Commercial Pack.

Section III. SPECIAL TOOLS LIST

Item No.	SMR code	National stock No.	Part No.	Federal supply code for mfg	Description	Unit of measure	Quantity incorporated in unit
1	PAOZZ	5120-00-319-5424	8864731	19203	SALLEE CLOSER		
2	PAOZZ	3540-00-565-6242	S-43104, Spec MIL-S-43104	81349	STRAPPING AND SEALING KIT: (3/8-Inch Strapping)		
3	PAOZZ	3540-00-565-6244	Type III Spec MIL-S-43104, Type V	81349	STRAPPING AND SEALING KIT: (1 1/4-Inch Strapping)		

*Inner and Outer

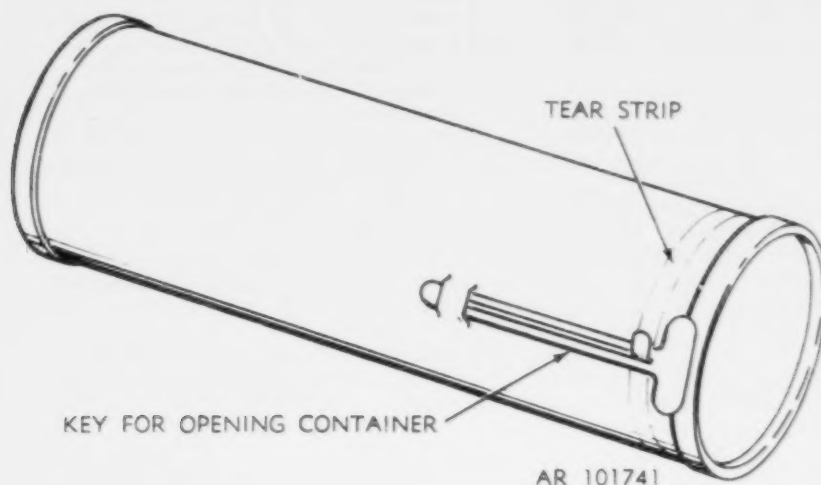


Figure C-3. Metal container.

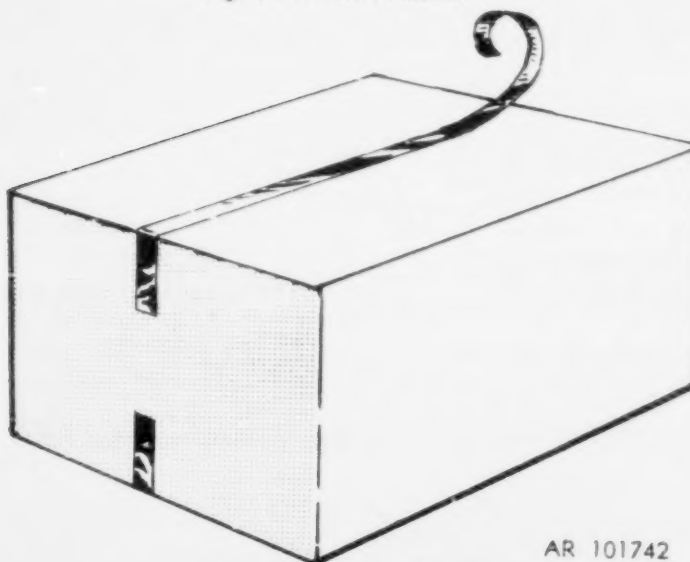
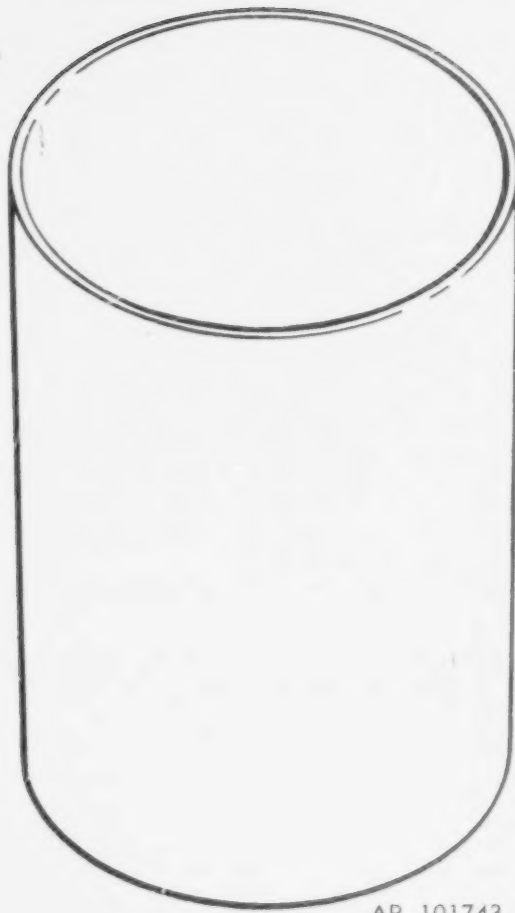


Figure C-4. Fiber container.



AR 101743

Figure C-5. Fiber drum.

Section IV. NATIONAL STOCK NUMBER AND PART NUMBER INDEX

National Stock Number Cross Reference to Figure Number

National stock number	Figure no.	National stock number	Figure no.
8105-00-256-7239	1	8140-00-484-8234	1
8140-00-001-7869	1	8140-00-484-8237	1
8140-00-001-9248	1	8140-00-484-8238	1
8140-00-001-9249	1	8140-00-484-8239	1
8140-00-001-9250	2	8140-00-780-9188	5
8140-00-001-9250	4	8140-00-780-9191	2
8140-00-001-9252	3	8140-00-780-9192	2
8140-00-001-9253	3	8140-00-783-7707	2
8140-00-601-9254	4	8140-00-783-7732	2
8140-00-001-9255	1	8140-00-783-7733	2
8140-00-031-7956	1	8140-00-783-7830	2
8140-00-038-5051	2	8140-00-783-7892	2
8140-00-089-8634	2	8140-00-783-7894	2
8140-00-089-8664	2	8140-00-783-7907	2
8140-00-144-9824	3	8140-00-783-7923	2
8140-00-144-9841	2	8140-00-783-7932	2
8140-00-144-9850	1	8140-00-824-0809	2
8140-00-144-9855	1	8140-00-827-0489	1
8140-00-144-9896	1	8140-00-828-2993	2
8140-00-144-9905	2	8140-00-831-0086	2
8140-00-145-0054	2	8140-00-832-0193	2
8140-00-145-0069	2	8140-00-832-0195	2
8140-00-484-8225	1	8140-00-832-0226	2
8140-00-484-8228	4	8140-00-859-8024	2
8140-00-484-8233	1		

National Part Number Cross Reference to Figure Number

Part No.	FSCM	Fig No.	Part No.	FSCM	Fig No.
C4-1-14	81361	2	8836949	19203	1
MIL-B-117	81349	1	8836950	19203	2
20-4-72	19203	2	8837837	19203	2
563246	10001	2	8837838	19203	3
593127	10001	1	8853677	19203	1
7548414	19203	3	8853678	19203	2
7548415	19203	2	8860564	19203	1
7548472	19203	1	8860565	19203	2
7548473	19203	2	8860596	19203	1
76-1-1255	19203	2	8860597	19203	2
76-1-870	19203	3	8864174	19203	2
76-2-71	19203	4	8864175	19203	1
8799710	19203	2	8864219	19203	5
8799711	19203	1	8866684	19203	4
8799712	19203	2	8866685	19203	2
8799713	19203	1	8880486	19203	2
8799714	19203	2	8880487	19203	4
8799715	19203	2	9210949	19203	1
8799716	19203	1	9210950	19203	2
8799717	19203	2	9224974	19203	1
8830880	19203	2	9224975	19203	2
8830881	19203	1	9231550	19203	1
8835158	19203	1	9231551	19203	2
8835159	19203	2	9234286	19203	2
8836949	19203	1	9234287	19203	2
8836950	19203	2			

APPENDIX D

CONSUMABLE SUPPLIES

Section I. INTRODUCTION

D-1. Scope

a. This appendix lists expendable items which are required for organizational maintenance.

b. Consumable supplies should be requisitioned through normal supply channels to comply with maintenance requirements.

D-2. Explanation of Columns

a. *National Stock Numbers, Column 1.* Indicates the National Stock number assigned to the item and will be used for requisitioning purposes.

b. *Description, Column 2.* Indicates the item name and brief description.

c. *Specification No., Column 3.* Indicates military specification assigned to the item.

d. *Unit of issue.* Indicates the unit of issue of each item.

D-3. List of Abbreviations

bg	.....	bag
bx	.....	box
cl	.....	coil
ea	.....	each
gl	.....	gallon
hd	.....	hundred
lb	.....	pound
pr	.....	pair
pg	.....	package
pt	.....	pint
qt	.....	quart
rl	.....	roll
se	.....	set

Section II. CONSUMABLE SUPPLIES

(1) National stock No.	(2) Description	(3) Specification No.	(4) Unit of issue
6810-00-184-4796	ACETONE, TECHNICAL: can	O-A-51	gl
6810-00-543-7415	ALCOHOL, DENATURED: grade III	O-E-760	gl
8020-00-597-4767	BRUSH, ARTISTS: flat 5/8 in.	H-B-118	ea
7920-00-255-5135	BRUSH, WIRE SCRATCH: wood and copper beryllium alloy, curved handle, 14 in. x 15/16 in. block, 6 in. x 1-1/4 in. wire brush.	H-B-178	ea
7920-00-269-0933	BRUSH, WIRE SCRATCH: wood and copper beryllium alloy, straight handle, 7 in. x 1 in. block, 6 in. x 1-1/4 in. wire brush.	H-B-178	ea
	ENAMELS:		
8010-00-848-9272	Olive drab, No. 34087: spray can	TT-E-516	pt
8010-00-878-5761	White, No. 37875: spray can	TT-E-516	pt
8010-00-910-8154	Black, No. 37088: spray can	TT-E-516	pt
8010-00-844-0870	Orange, No. 32246: spray can	TT-E-515	pt
8010-00-577-4937	Red, No. 31168: preferred	MS35527-10	pt
8010-00-297-2111	White, No. 37875	TT-E-516	gl
8010-00-297-2112	Yellow, No. 33538	TE-E-515	gl
8010-00-297-2114	Bright red, No. 31136	TT-E-516	gl
8010-00-297-2116	Olive green, No. 34087	TT-E-516	gl
8010-00-297-2118	Green, No. 34108	TT-E-516	gl
8010-00-297-2119	Blue, No. 35109	TT-E-516	gl
8010-00-297-2120	Gray, No. 36231	TT-E-516	gl
8010-00-297-2122	Black, No. 37038	TT-E-516	gl
8010-00-828-3193	Light green, No. 34558	TT-E-516	gl

(1) National stock No.	(2) Description	(3) Specification No.	(4) Unit of issue
5315-00-597-9766	ENAMELS:--Continued FASTENER, CORRUGATED, WOOD JOINT: saw edge 1 2 in. deep.	F-F-F-133	bx
8415-00-926-1674	GLOVES BARRED TAPE-WIRE HANDLERS: leather.	MIL-G-43411	pr
7510-00-161-0813	INK, MARKING, STENCIL: black	TT-I-1795	qt
7510-00-161-0811	INK, MARKING, STENCIL: black	TT-I-1795	gl
7510-00-191-6030	INK, MARKING, STENCIL: black, for nonporous surface.	TT-I-1795	gl
7510-00-469-7910	INK, MARKING, STENCIL: black LACQUER:	AN-1	pt
8010-00-721-9479	Orange, type 1, No. 12215	TT-L-50	pt
8010-00-584-3148	Orange, type 1, No. 12197	TT-L-50	pt
8010-00-063-8968	Brown No. 30117	MIL-L-11195	gl
8010-00-527-3196	Sand No. 30277 for obliterating markings.	TT-L-40	gl
7520-00-286-5749	MARKER, TUBE TYPE: heavy duty pen: pack	GG-M-117	ea
7520-00-239-8553	MARKER, TUBE TYPE: heavy duty pen/w/extra tips.	GG-M-117	se
7520-00-973-1059	MARKER, TUBE TYPE: black pack	GG-M-00114	ea
5315-00-889-2743	NAIL, BOX: style 4, type II, 4d, 1-1/2 in.	FF-N-105	lb
5315-00-889-2744	NAIL, BOX: style 4, type II, 6d, 2 in. long.	FF-N-105	lb
5315-00-889-2746	NAIL, BOX: style 4, type II, 8d, 2-1/2 in. long.	FF-N-105	lb
8010-00-899-8825	PRIMER COATING:	TT-P-1757	pt
8010-00-514-1861	PRIMER COATING: zinc chromate yellow	TT-P-600	spray
5340-00-598-3442	SEAL, ANTIPILFERAGE 5/16 in. dia, 3/16 in. thk, box.	MS51938-2	hd
7920-00-205-1711	RAG, WIPING	DDD-R-30	bg
8153-00-239-5291	SEAL, STRAPPING: 5/8 in.	QQ-S-781	bx
8135-00-239-5294	SEAL, STRAPPING: 1-1/4 in.	QQ-S-781	bx
5350-00-242-4405	WOOL, METALLIC	FF-S-740	rl
8135-00-281-4071	STRAPPING, STEEL: 5/8 in.	QQ-S-781	cl
8135-00-283-0671	STRAPPING, STEEL: 1-1/4 in.	QQ-S-781	cl
7510-00-823-8073	TAPE, PRESSURE SENSITIVE ADHESIVE: black, 1-1/2 in.	MIL-T-43036	rl
7510-00-266-6715	TAPE, PRESSURE SENSITIVE: 2 in. type III, class 2.	PPP-T-60	rl
7510-00-283-0612	TAPE, PRESSURE SENSITIVE ADHESIVE: 1 in., type II.	PPP-T-42	rl
8010-00-160-5788	THINNER, DOPE AND LACQUER: clear: pail	TT-T-266	gl

By Order of the Secretary of the Army:

Official:

J. C. PENNINGTON
Brigadier General, United States Army
The Adjutant General

BERNARD W. ROGERS
General, United States Army
Chief of Staff

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